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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,757	12/14/2001	Scott W. Corzine	10010430-1	2523

7590 12/19/2002

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[REDACTED] EXAMINER

PRITCHETT, JOSHUA L

[REDACTED] ART UNIT [REDACTED] PAPER NUMBER

2872

DATE MAILED: 12/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.	CORZINE ET AL.
Examiner Joshua L Pritchett	Art Unit 2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) Responsive to communication(s) filed on 21 November 2002.  
2a) This action is FINAL.                    2b) This action is non-final.  
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) Claim(s) 12-20 is/are pending in the application.  
4a) Of the above claim(s) 1-11 is/are withdrawn from consideration.  
5) Claim(s) \_\_\_\_\_ is/are allowed.  
6) Claim(s) 12-20 is/are rejected.  
7) Claim(s) \_\_\_\_\_ is/are objected to.  
8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) The specification is objected to by the Examiner.  
10) The drawing(s) filed on 14 December 2001 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.  
12) The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.  
14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.  
15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.  
4) Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.  
5) Notice of Informal Patent Application (PTO-152)  
6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tayebati (US 6,324,192) in view of Kudo (US 5,303,255) and Baillargeon (US 6,326,646).

Regarding claim 12, Tayebati teaches a Bragg reflector with one or more first layers adjacent one or more second layers (Fig. 5a.). Tayebati further teaches the Bragg reflector having at least one sidewall (Figs. 5a-d; col. 6 lines 53-55). Tayebati further teaches a Bragg reflector where the first and second layers define one or more gaps (Fig. 5c.). Tayebati fails to teach a support layer formed over the sidewalls to the second layers. Baillargeon teaches the use of a support layer (18 and 20) formed over the sidewalls of a Bragg reflector (Fig. 1). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the structure of the Tayebati reflector with the support layer of the Baillargeon reflector for the purpose of creating a heat sink in the instance that the Bragg reflector was being used to create a laser.

Regarding claims 13 and 18-19, Tayebati teaches that the second layer is made of GaAs (col. 6 lines 32-43). Tayebati fails to teach a support layer of the same material as the second layer. Baillargeon teaches the support layer comprising an electrically insulating material (col. 5 lines 14-15). Kudo teaches the use of GaAs as a “current blocking layer,” (col. 8 lines 50-51) therefore making the GaAs an electrically insulating layer. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the second layer and the support layer comprise the same material, namely GaAs for the purpose of cheaper production costs because of the elimination of an extra and different compound for the synthesis of the Bragg reflector.

Regarding claims 14-15, Tayebati teaches the invention as claimed but lacks reference to the support layer containing an electrically conductive and non-conductive portion. Baillargeon teaches the use of a support layer (18 and 20) with an electrically conductive portion (20) and an electrically non-conductive portion (18). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the support layer contain an electrically conductive and non-conductive portion as taught by Baillargeon for the purpose of supplying a pumping energy in order to create a laser out of the Bragg reflector.

Regarding claim 16, Tayebati teaches a Bragg reflector with a substrate and a plurality of structure layers spaced apart by a gap and with edges (Fig. 5d.). Tayebati lacks reference to a support layer about a portion of the edges. Baillargeon teaches the use of a support layer (18 and 20) formed over the sidewalls of a Bragg reflector (Fig. 1). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the structure of

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the Tayebati reflector with the support layer of the Baillargeon reflector for the purpose of creating a heat sink in the instance that the Bragg reflector was being used to create a laser.

Regarding claim 17, Tayebati teaches the use of a sacrificial layer between the structure layers and the sacrificial layer being undercut to form the gaps (Fig. 5a-d; col. 6 lines 33-43).

Regarding claim 20, Tayebati teaches the invention as claimed but lacks reference to the support layer covering at least a portion of the structure layers. Baillargeon teaches the support layer covering at least a portion of the structure layers (Fig. 1). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the support layer cover at least a portion of the structure layers as taught by Baillargeon for the purpose of providing the reflector with optical and current confinement so as to allow the Bragg reflector to function as a laser.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nurmikko (US 6,233,267) teaches the use of a Bragg reflector as a laser.

Stankus (US 6,150,190) teaches the creation of a Bragg reflector.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L Pritchett whose telephone number is 703-305-7917.

The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on 703-308-1687. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JLP  
December 10, 2002



James Phan  
Primary Examiner